

THE FIRST RECORD OF NECTRIA RADICICOLA IN BRITAIN

ROY WATLING

The perithecial state of *Nectria radicicola* Gerlach & Nilsson (1963) was found recently growing on various tree-ferns at the Botanic Garden, Edinburgh in association with a localised soft rot of the old rachides and pruned parts of the rhizome. It first appeared on an unidentified *Sadleria* specimen and has since been observed on several other members of the fern collection, including species of *Cibotium*. The various species of tree-fern were received from G. W. Gillett, then at the Department of Botany, University of Hawaii, Honolulu on December 13th, 1966; the fungus was not observed however until February of the next year on material which was being propagated. The soft rot with which the perithecia have been associated has been carefully examined and appears never to extend throughout the attacked plant; the infected ferns in fact appear to be otherwise quite healthy and new shoots readily break away. The conidial state of this fungus, *Cylindrocarpon destructans* (Zins.) Scholten, more commonly known under the synonym *C. radicicola* Wollenw., has been recorded on several substrates. Both saprophytic and parasitic strains appear to exist for it is a frequent member of the rhizosphere, and is frequently recorded from root surfaces (Kubikova, 1963) and reported as causing decay. Accounts are available of this fungus attacking woody seedlings (Martin, 1950; Taylor, 1956, etc.), stored potatoes (Rec. Minist. Agric. N Ireland, 1957), stored carrots (Creelman, 1960) and bulbs, particularly *Narcissus* (Beaumont, 1950). Moore (1959) also lists the conidial state as causing disease and/or decay in *Azalea*, *Chrysanthemum*, *Fragaria* (Strawberry), *Gloxinia* and *Lilium*. It has been considered that the fungus is not a primary pathogen but enters the plant tissue in the wake of nematode colonization; the old rachides in the Edinburgh material were certainly colonized by nematodes and the affected areas exuded a sugary, darkening, elastic latex.

This is the first collection of the perfect state of this fungus from the British Isles as far as can be ascertained, and probably only the second one on record. I am very grateful to Dr. C. Booth, Commonwealth Mycological Institute, Kew, for identifying the perfect state.

The ferns have been treated with a dilute solution of Bordeaux mixture (1-1-50) as recommended for the treatment of tip blight of fern (*Phyllosticta pteridis*—Pirone, Dodge & Rickett, 1960). However, even after this treatment perithecial structures have continued to develop on one very badly infected plant. Although conidiophores of the accompanying conidial stage have been at all times rare, it was no longer present even on the rotten rachides after treatment.

Due to the rarity of these tree-ferns in cultivation, little material has been available for experimentation; however, simply rubbing an actively growing specimen with ripe perithecia or with a pure culture, produced no deterioration. *Cyclamen persicum*, because it was the first host on which the sexual stage was recorded, was also inoculated; detached leaves after fourteen days

exhibited cushions of the conidial state, whereas fruit-bodies, asexual or sexual, could neither be found on leaves nor corms of actively growing inoculated specimens. In one experiment one side of the corm was damaged before inoculation and left in unsterilised damp soil to be colonised by constituents of the normal soil flora and fauna. Little or no accompanying colonization by the *Nectria*, taking conidial and/or perithecial development as a measure, was observed.

A full description with accompanying figures is not given as the material agrees microscopically in every way with both the type description and that recently distributed by Booth (1967). The perithecia were scattered or gregarious on the outer surface of uncurled shoots or cut ends of rachides, (115-) 150-210 μ in diameter, globose to ovoid or slightly ampulliform with a short, apical, blunt, broad papilla, deep red to brownish red with an opaque wall, and developed on a very thin byssus, lateral wall in section 20-35 μ wide; hyaline, thin-walled cells lining the perithecial cavity grading through only slightly thickened ones into fairly thick-walled cells up to 8 μ in diameter towards the outside.

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